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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,788	04/02/2004	Dong-Gyu Kim	6192.0368.US	9930
23345	7590	02/21/2006	EXAMINER	
MCGUIREWOODS, LLP 1750 TYSONS BLVD SUITE 1800 MCLEAN, VA 22102			LOUIE, WAI SING	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/815,788

Applicant(s)

KIM, DONG-GYU

Examiner

Wai-Sing Louie

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 21-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-20 is/are rejected.
- 7) ☒ Claim(s) 12 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

- The pixel electrode is enclosed by the first passivation layer is claimed. However, the first passivation layer 801 does not enclosed the pixel electrode 190 in the current specification and drawings. Current specification discloses the second passivation layer 802 encloses the pixel electrode 190 (see the abstract, paragraph [0008] and [0061]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11, 13-15, and 17-20 (in so far as they are understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6,784,965) in view of Yamazaki et al. (US 6,784,457).

With regard to claim 1, Kim et al. disclose a liquid crystal display device (col. 5, line 26 to col. 10, line 60 and fig. 9-11) comprising:

- A gate line 111 formed on an insulating substrate 100 (col. 5, lines 36-37);
- A gate insulating layer 121 on the gate line 111 (col. 5, line 38 and fig. 11);
- A semiconductor layer 131 on the gate insulating layer 121 (col. 5, lines 40-41);
- A data line 141 formed on the gate insulating layer 121 (col. 5, lines 43-46 and fig. 11);
- A drain electrode 145 formed at least in part on the semiconductor layer 131 (col. 6, lines 21-33 and fig. 11);
- A first passivation layer 151 formed on the color filter (col. 6, lines 34-39 and fig. 11);
- A pixel electrode 165 formed on the color filter, connected to the drain electrode 145, overlapping the first passivation layer 151, and enclosed by the first passivation layer 151 (fig. 11);
- Kim et al. disclose a color filter 7 formed on the surface of the upper substrate 1 (col. 2, lines 7-8), but do not disclose the color filter formed on the data line and the drain electrode. However, Yamazaki et al. disclose a color filter 171 formed on the drain electrode (Yamazaki col. 12, lines 23-36 and fig. 3c). Yamazaki et al.

teach t color filter prevent light degradation of the active layer of the TFTs (Yamazaki col. 5, lines 38-48). Therefore, it would have been obvious to one of ordinary skill in the art to modify Kim's device with the teaching of Yamazaki et al. to provide a color filter formed on the drain electrode and the data line in order to prevent light degradation of the active layer of the TFTs.

With regard to claim 2, Kim et al. disclose the overlapping portion of the first passivation layer 151 and the pixel electrode 165 is disposed on the data line 141 (fig. 11).

With regard to claim 3, Kim et al. disclose the edges of the pixel electrode 165 overlap the passivation layer 151 and the passivation layer 151 has an opening 153 having edges near the edges of the pixel electrode 165 (fig. 11).

With regard to claim 4, Kim et al. disclose the data line is bent at an angle, which includes a pair of rectilinear portions connected to each other and making a angle, but do not disclose the angle is about 45°. Since the applicant has not established the criticality of the angle stated and since these angles are in common use in similar devices in the art, it would have been obvious to one of ordinary skill in the art to use these values in the device. Where patentability is said to be based upon particular chosen dimension or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

With regard to claim 5, Kim et al. disclose a storage electrode 149 formed on the substrate and including an expansion overlapping the pixel electrode 167 to form a storage capacitor (col. 5, line 65 to col. 6, line 1 fig. 11).

With regard to claim 6, Kim et al. disclose the drain electrode 145 includes an expansion overlapping the expansion of the storage electrode line 165 (fig. 11).

With regard to claim 7, Kim et al. disclose the passivation layer 151 comprises an inorganic insulator (col. 6, lines 33-39).

With regard to claim 8, Kim et al. disclose the passivation layer 151 could be made of acrylate resin (col. 6, lines 33-39), but do not disclose it is photosensitive. However, statements of intended use, or functional language do not structurally distinguish claims over prior art, which can function in the same manner, be labeled in the same manner, or be used in the same manner. See in *re Pearson*, *Ex parte Minks*, and *In re Swinehart*.

With regard to claims 9-10, Kim et al. modified by Yamazaki et al. in claim 1 above disclose a second passivation layer 147 between the color filter 171 and the data line (Yamazaki fig. 3c). The second passivation layer 147 and color 171 have contact hole exposing drain electrode 157 (Yamazaki fig. 3c). The pixel electrode is connected to the drain electrode 158 (Yamazaki fig. 3c).

With regard to claim 11, Kim et al. disclose the a contact assistant (via) 155 formed on a portion of gate line 111 and made of the same material as the pixel electrode 149 (col. 6, lines 21-33 and fig. 9a).

With regard to claims 13 and 15, Kim et al. modified by Yamazaki et al. disclose the first passivation layer 146 and the pixel electrode 158 covers the entire surface of the color filter (Yamazaki fig. 6).

With regard to claims 14 and 17, in addition to the limitations disclosed in claim 1 above, Kim et al. modified by Yamazaki et al. also disclose:

- A first substrate 100 (fig. 11);
- A first signal line 165 disposed on the substrate 100 (fig. 9a);
- A second signal line 111 disposed on the substrate 100 and intersecting the first signal line 165 (fig. 9a);
- A TFT connected to the first and second signal lines (fig. 9a);
- A second substrate 185 facing the first substrate 101 and spaced apart from the first substrate with a gap 190 (Yamazaki fig. 15);
- A common electrode 187 formed on the second substrate 185 (Yamazaki fig. 15)
- A light blocking member disposed on the common electrode (col. 3, lines 21-34);
- A liquid crystal layer filled in the gap between the first and the second substrates (Yamazaki col. 18, lines 48-60).

With regard to claim 18, Kim et al. modified by Yamazaki et al. disclose the spacer 182 is located on the TFT (Yamazaki fig. 15).

With regard to claim Kim et al. disclose the liquid crystal layer has negative dielectric anisotropy and is subject to vertically alignment (col. 2, lines 1-13).

With regard to claim 20, Kim et al. disclose the common electrode 161 has a cutout (fig. 9a).

Allowable Subject Matter

Claims 12 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The prior art of record does not disclose or suggest either in singularly or in combination the following limitations and other elements in the claims:

References Kim et al. and Yamazaki et al. do not disclose:

- The entire bottom surfaces of the data line and the drain electrode are disposed substantially on the semiconductor layer, the data line and the drain electrode have substantially the same planar shape as the semiconductor layer, and the semiconductor layer includes a portion that is not covered with the data line and the drain electrode and disposed between the source electrode and the drain electrode.
- The light-blocking member includes a first portion maintaining the gap between the first substrate and the second substrate and a second portion having a thickness lower than the first portion.

Therefore, the above references do not disclose the claimed invention of present application and claims 12 and 16 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments filed 12/9/05 have been fully considered but they are not persuasive.

- Applicant argues that Kim et al. do not disclose a color filter and Yamazaki does not provide any motivation to modify Kim's device such that the color filter of Yamazaki is formed on the data line of Kim. However, Yamazaki et al. disclose a color filter 171 formed above the active layer and the gate electrode (Yamazaki fig. 4a). Yamazaki et al. provide a motivation that the color filter prevents light degradation of the active layer of the TFT's (Yamazaki col. 5, lines 38-48). Therefore, the combination of Kim and Yamazaki is proper. The data line 141 in Kim's device is on the same layer as the gate electrode 113 (see fig. 11) and the drain electrode 145 is under the pixel electrode 165 (see fig. 11). The color filter would be formed above the data line and drain electrode.
- Applicant argues that the pixel electrode is not formed in the opening of the insulating layer. However, Kim et al. modified by Yamazaki et al. would have a color filter layer 171 and an insulating layer 147 is formed on top of the color filter 171 (Yamazaki fig. 3c). Kim et al. disclose the pixel electrode 165 is formed on the drain electrode 145 (Kim fig. 11). Therefore, Kim modified by Yamazaki would disclose a color filter layer formed above the drain electrode 145 and an insulating layer formed on top of the color filter, where an opening in the insulating layer is provided for the pixel electrode 165 to meet the drain electrode 145.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (571) 272-1709. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Wai-Sing Louie
Patent Examiner

Wsl
February 15, 2006.